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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,877	10/11/2004	Jia-Jio Huang	FTCP0033USA	5876
27765	7590	03/21/2005	EXAMINER	
NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)			WAMSLEY, PATRICK G	
P.O. BOX 506			ART UNIT	
MERRIFIELD, VA 22116			PAPER NUMBER	
			2819	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/711,877	Applicant(s) HUANG ET AL. 	
	Examiner Patrick G. Wamsley	Art Unit 2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the reference signal circuit and clock generator must be shown or canceled from claims 2, 3, 6, and 8. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 11, 12, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On line 8 of claim 12, the term "first reference switch" is ambiguous, because it could refer to either the first reference input switch or the first reference reset switch. Applicant should amend the claim to clarify this ambiguity. From context, the examiner believes this element corresponds to the first reference reset switch.

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Claim 7 recites the limitation "second feedback capacitor" in line 1. There is insufficient antecedent basis for this limitation in claim 5. Applicant should amend claim 7 so that it depends upon claim 4.

Claim 11 recites the limitation "second feedback capacitor" in line 1. There is insufficient antecedent basis for this limitation in claim 9. Applicant should amend claim 11 so that it depends upon claim 10.

Claim 15 recites the limitation "second feedback capacitor" in line 2. There is insufficient antecedent basis for this limitation in claim 14. Applicant should amend claim 15 so that it depends upon claim 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art, hereafter APA, depicted in Figures 1-3, in view of U.S. Patent 6,570,519 to Yang, hereafter Yang.

As shown in Figure 3, APA provides a switched capacitor circuit comprising an operational amplifier; a first sampling capacitor [C_s]; a first signal input switch [S1]; a first reference input switch [S5]; a first input reset switch [S9]; and a first feedback network [S3 / S7]. Unlike claim 1, APA lacks a reference reset switch.

In contrast, Yang provides a switch [302a] that is functionally equivalent to the recited reference reset switch, resetting the voltage to a common mode level.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have applied Yang's teachings to APA's circuit. The motivation would have been to reduce power consumption, as suggested by Yang on line 11 of column 2.

For claim 8, APA provides a pipelined analog to digital converter, hereafter ADC. In the combination, multiple switched capacitor circuits, using Yang's switches, would have been assembled inside the multiple stages of the ADC.

Claim 12 restates the apparatus limitations of claim 1 in method format.

For claims 2, 6, and 8, APA generates a reference signal, V_{COM} .

For claims 3 and 8, APA generates multiple clock signals, as shown in Figure 3. In the combination, Yang's reset switches would operate during a different phase of the clock relative to the other switches.

For claims 4, 10, and 13, APA provides a first feedback capacitor [C_T]; a first input feedback switch [S3]; and a first output feedback switch [S7].

For claims 5, 9, and 14, APA provides a second sampling capacitor [C_s]; a second signal input switch [S2]; a second reference input switch [S6]; a second input

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reset switch [S10]; and a second feedback network [S4 / S8]. In the combination, Yang's second switch [302b] would have served as the second reference reset switch.

For claims 7, 11, and 15, APA provides a second feedback capacitor [C_T]; a second input feedback switch [S4]; and a second output feedback switch [S8].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,778,009 to Lee shows a switched capacitor amplifier having a plurality of transistors serving as switching elements. U.S. Patent 6,307,497 to Leung et al provides a switched capacitor network for a programmable ADC. U.S. Patent 6,147,522 to Rhode et al discloses reference voltage circuitry used in switched-capacitor applications. U.S. Patent 5,293,169 to Baumgartner et al shows a switched capacitor circuit using a multi-phase clock. U.S. Patent 4,543,534 to Temes et al describes offset compensated switched capacitor circuits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (703) 872-9306. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.


Patrick G. Wamsley
March 16, 2005